Protein Microgels from Amyloid Fibril Networks

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SUPPLEMENTARY INFORMATION

The pH dependence of the release kinetics was probed on ThT and penicillin V molecules as a function of time (Fig. S2 a and b). Our choice of ThT and penicillin drug-like molecules was based on the slowest and fastest release profiles, respectively, obtained previously (Fig. 3d) for neutral pH.

Figure S1. (a) FTIR spectra of lysozyme monomers, lysozyme fibers and lysozyme microgel; (b) chart summarizing β -sheet content (in %) in lysozyme microgels; (c) graph summarising release kinetics in α -MEM media as a function of time.

Figure S2. (a) Circular Dichroism (CD) spectra of lysozyme, indicating significant β -sheet content in its monomeric and nanofibrillar states in microgel capsules.; (b) Lysozyme aggregation kinetics followed by ThT fluorescence intensity as a function of time.

Figure S3. (a) pH-dependence of the release kinetics for ThT and penicillin V molecules.; (b) Released content (in % after 30 min) for ThT and penicillin V molecules at different pH values.

Figure S4. Schematic representation of the release mechanism for lysozyme capsules. (i) SEM image of a lysozyme microgel capsule, (ii) TEM image of a lysozyme microgel with protein layer detached from the surface. Scale bar = 1 μm (iii) SEM image of the microgel illustrating the creation of the pores on the surface. (iv) TEM image of lysozyme fibrils released from the microgel. Scale Bar = 0.1 μm . (v) SEM images of disaggregated lysozyme capsule: scale bars for SEM images = 10 μm .

Figure S5. (a) Schematic representation of the KD peptide microgel synthesis; (b) microscopy image of nanofibrillar microgels formed from the KD peptide. Scale Bar = 20 μm .

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